

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) An isolated nucleic acid encoding a protein comprising the amino acid sequence of SEQ ID NO:2.
2. (Currently Amended) An isolated nucleic acid encoding the amino acid sequence of SEQ ID NO:2 or a fragment thereof, wherein the fragment is at least 40% of the length of the sequence shown as SEQ ID NO:2, and ~~encodes a protein that~~ the fragment binds to BMP2/4.
3. (Currently Amended) ~~The An isolated nucleic acid of claim 44, wherein the number of amino acids substituted, deleted, and/or inserted is encoding a protein that (a) comprises the amino acid sequence of SEQ ID NO:2 in which 5 or fewer amino acids are substituted, deleted, and/or inserted, and (b) binds to BMP2/4.~~
4. (Original) The nucleic acid of claim 1, wherein the nucleic acid encodes a fusion protein comprising a first amino acid sequence as shown in SEQ ID NO:2 fused to a second amino acid sequence.
5. (Original) A vector into which the nucleic acid of claim 1 is inserted.
6. (Original) A vector into which the nucleic acid of claim 2 is inserted.
7. (Original) A transformant harboring the nucleic acid of claim 1.
8. (Original) A transformant harboring the nucleic acid of claim 2.
9. (Original) A transformant harboring the vector of claim 5.
10. (Original) A transformant harboring the vector of claim 6.

11-12 (Canceled)

13. (Previously Presented) A method for producing a polypeptide, the method comprising the steps of culturing the transformant of claim 9 and recovering the protein from the transformant or from the culture supernatant thereof.

14. (Previously Presented) A method for producing a polypeptide, the method comprising the steps of (a) culturing the transformant of claim 10 and (b) recovering the protein from the transformant or from the culture supernatant thereof.

15-27 (Canceled)

28. (Previously Presented) A nucleic acid encoding a fusion protein comprising a first amino acid sequence that has the sequence of residues 25-222 of SEQ ID NO:2 fused to a second amino acid sequence.

29. (Previously Presented) The nucleic acid of claim 28, wherein the second amino acid sequence comprises any one of the following: glutathione S-transferase, FLAG, six histidine residues, influenza agglutinin (HA), human c-myc fragment, VSV-GP fragment, p18HIV fragment, T7-tag, HSV-tag, E-tag, SV40T antigen fragment, lck tag, α -tubulin fragment, B-tag, Protein C fragment, immunoglobulin constant region, β -galactosidase, Green Fluorescent Protein (GFP), and maltose binding protein.

30. (Previously Presented) The nucleic acid of claim 28, wherein the fusion protein comprises an initiator methionine.

31. (Previously Presented) The nucleic acid of claim 28, wherein the fusion protein comprises a signal sequence.

32. (Previously Presented) The nucleic acid of claim 28, wherein the fusion protein further comprises residues 1-24 of SEQ ID NO:2.

33. (Canceled)

34. (Previously Presented) A vector into which the nucleic acid of claim 28 is inserted.

35. (Previously Presented) A vector into which the nucleic acid of claim 29 is inserted.

36. (Canceled)

37. (Previously Presented) A transformant harboring the nucleic acid of claim 28.

38. (Canceled)

39. (Previously Presented) A transformant harboring the vector of claim 34.

40. (Previously Presented) A transformant harboring the vector of claim 35.

41. (Canceled)

42. (Previously Presented) A method for producing a protein, the method comprising the steps of culturing the transformant of claim 37 and recovering the fusion protein from the transformant or the culture supernatant thereof.

43. (Previously Presented) An isolated nucleic acid comprising the coding region of the nucleotide sequence of SEQ ID NO:1.

44-46 (Canceled)

47. (Currently Amended) ~~The nucleic acid of claim 46, wherein the protein, An isolated nucleic acid encoding a protein that (a) has at least 95% identity to the amino acid sequence of SEQ ID NO:2, and (b) binds to BMP2/4.~~

48. (Currently Amended) The nucleic acid of ~~claim 46~~ claim 47, wherein the protein has at least 98% identity to the amino acid sequence of SEQ ID NO:2.

49. (Currently Amended) The nucleic acid of claim ~~claim 46~~ claim 47, wherein the protein has at least 99% identity to the amino acid sequence of SEQ ID NO:2.

50. (Previously Presented) An isolated nucleic acid that encodes a protein comprising residues 25-222 of SEQ ID NO:2.

51. (Canceled)

52. (Previously Presented) The nucleic acid of claim 50, wherein the protein consists of residues 25-222 of SEQ ID NO:2 with an initiator methionine or a signal peptide.

53. (Previously Presented) The nucleic acid of claim 50, wherein the protein consists of the amino acid sequence of SEQ ID NO:2.